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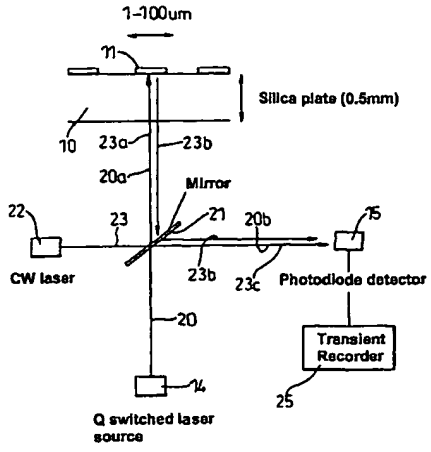
(54) Title: BIOCHEMICAL SENSOR WITH THERMOELASTIC PROBES



(57) Abstract: The thermoelastic response of certain materials to an incident electromagnetic excitation beam is highly sensitive to physical conditions existing at the surface of the material. Probe structures carrying probe materials are used as sensors in the analysis and investigation of bio-chemical molecules. Each probe structure is adapted to undergo a thermoelastic response when excited by temporally varying electromagnetic radiation, characteristics of the thermoelastic response being a function of physical properties of material binding to the surface of the probe structure. An electromagnetic excitation means directs electromagnetic energy at a selected one of the probe structures in order to elicit the excitation response. A detection means determines change in excitation response of the probe structures resulting from the binding of molecules thereto.

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